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## **Wall Louvers – Product Data**

ARROW

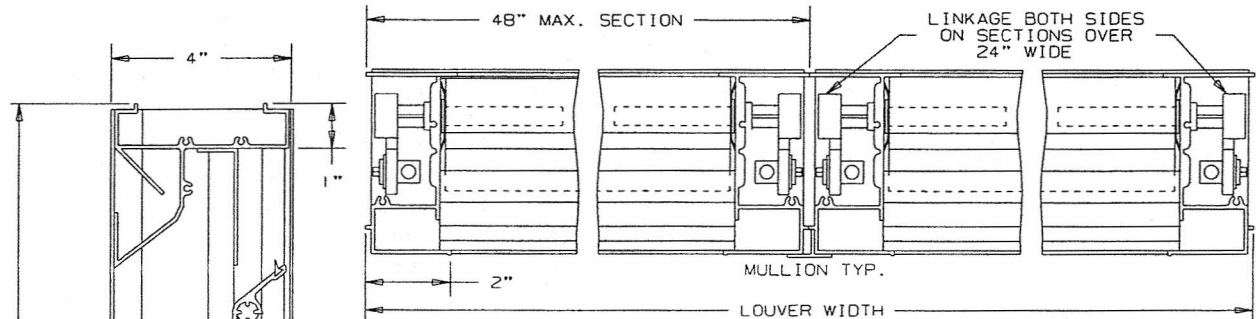
EXTRUDED ALUMINUM LOUVERS

COMBINATION ADJUSTABLE AND STATIONARY DRAIN  
4" DEEP

TYPE

EA-480-D

DRAIN LOUVER - 35° STATIONARY BLADES



SPECIFICATIONS

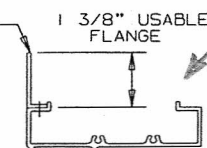
BEARINGS: CELCON BEARING MATERIAL SO THAT THERE WILL BE NO METAL TO METAL FRICTION. OPERATING LINKAGE CONCEALED IN FRAME, OUT OF THE AIR STREAM.  
FRAME AND STATIONARY BLADE: EXTRUDED ALUMINUM 6063-T6/T52 ALLOY. FRAME IS .080" THK., BLADE IS .080" THK. ON 3 1/2" CENTERS.  
ADJUSTABLE BLADE: EXTRUDED ALUMINUM 6063-T6/T52 ALLOY, .125" THK.  
FACE OF LOUVER: FULL WIDTH SILL WITH HEAD AND BLADES CONTAINED WITHIN THE JAMBS.  
LINKAGE: EXTRUDED ALUMINUM, CONCEALED IN CHANNEL OUT OF AIRSTREAM. PIVOTS ARE .50" DIA. MACHINED STEEL, CADMIUM PLATED AND CHROMATE TREATED. PIVOTS ROTATE IN A CELCON BEARING. A .312" DIA. ALUMINUM LINKAGE ROD IS LOCKED TO THE PIVOT BY A 1/4-20 SET SCREW WITH AN EPOXY LOCKING PATCH.  
SHAFTS: .50" DIA. ALUMINUM "PIN-LOCK" ROD.  
SEALS: EXTRUDED SILICONE RUBBER SEAL AT BLADE EDGE. STAINLESS STEEL AT JAMB.  
SCREENS: WHEN INDICATED, IN A REMOVABLE FRAME.  
BIRD SCREEN - 1/2" FLATTENED ALUMINUM, .051" THK.  
OR - 1/2" 50. MESH, INTERMEDIATE DOUBLE-CRIMPED ALUMINUM WIRE, .063 DIA.  
OR - 18/16 MESH, .011" DIA. ALUMINUM WIRE, INSECT SCREEN.

FINISH: MILL.  
LOUVER SIZES: 12" x 12" MINIMUM PANEL SIZE.  
48" x 96" MAXIMUM PANEL SIZE.

LOUVER PERFORMANCE STATEMENT

LOUVER MODEL EA-480-D SHALL BE FABRICATED TO PROVIDE A MINIMUM OF (52%), 8.36 SQUARE FEET OF FREE AREA FOR A 48" x 48" SIZE LOUVER AND BEAR THE AMCA CERTIFIED RATINGS SEAL FOR AIR PERFORMANCE AND WATER PENETRATION. THE RATINGS SHALL SHOW A BEGINNING POINT OF WATER PENETRATION AT .01 OUNCES PER SQUARE FOOT OF FREE AREA AT A FREE AREA VELOCITY OF 994 FEET PER MINUTE, (8309) CUBIC FEET PER MINUTE, WITH A .14 INCHES WATER GAUGE PRESSURE DROP FOR AIR INTAKE.

NOT TO SCALE  
FLANGE FRAME (AVAILABLE FRONT FACE ONLY)



OPTIONAL  
FLANGE FRAME AVAILABLE  
• OTHER SCREENS  
• ARCHITECTURAL FINISHES  
• ACTUATORS (ELECTRIC, PNEUMATIC, MANUAL, ETC.)

FOR CERTIFIED RATINGS  
AUTHORIZED BY AMCA  
- SEE REVERSE SIDE

NOMINAL DEDUCTIONS WILL BE MADE TO THE OPENING SIZES GIVEN.

ITEM	QTY.	2	36	36	WIDTH	HEIGHT	WIDTH	HEIGHT	MULL	B	I	TYPE	LOC	SCREENS



<p>ARROW UNITED INDUSTRIES A DIVISION OF MESTEK, INC. 314 RIVERSIDE DRIVE WYALUSING, PA 18853 TEL: (570) 746-1888 FAX: (570) 746-9286</p>	ARCH./ENG.:		
	CONTR.:		
	PROJECT:		
	EDR:	ECN:	JOB:
	DATE:	DWN.:	DWG.:

AGENT: \_\_\_\_\_

927-D-JANUARY-2006-1

TREATMENT BUILDING LOUVERS

BAKED ENAMEL FINISH - STANDARD COLORS  
THERMOSTAT

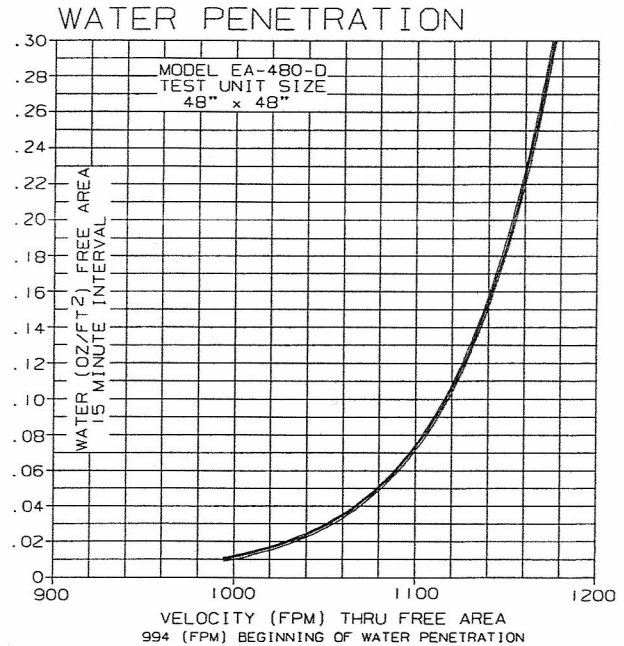
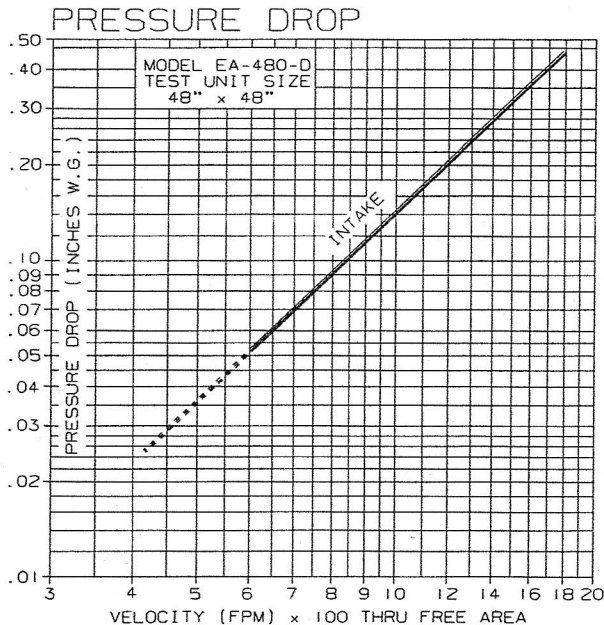
# LOUVER MODEL EA-480-D

## DRAIN LOUVERS

EXTRUDED ALUMINUM - COMBINATION ADJUSTABLE

### PERFORMANCE DATA

RATINGS DO NOT INCLUDE EFFECTS OF BIRDSCREEN.

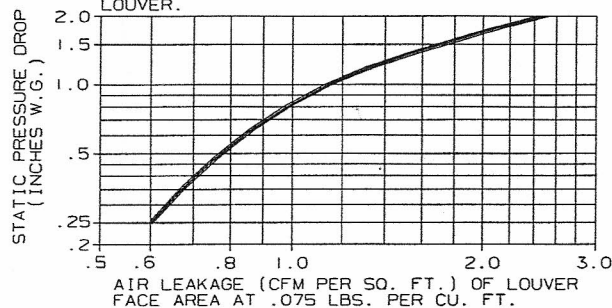


### FREE AREA

	FREE AREA (SQ. FT.)						
	WIDTH						
HEIGHT	12"	18"	24"	30"	36"	42"	48"
12"	.18	.32	.46	.60	.74	.88	1.02
24"	.59	1.03	1.48	1.92	2.36	2.81	3.25
36"	1.00	1.75	2.49	3.24	3.99	4.74	5.49
48"	1.52	2.67	3.81	4.95	6.09	7.23	8.36
60"	1.90	3.32	4.74	6.16	7.58	9.00	10.42
72"	2.39	4.19	5.98	7.78	9.57	11.37	13.16
84"	2.79	4.89	6.98	9.08	11.17	13.27	15.36
96"	3.26	5.71	8.16	10.61	13.05	15.50	17.95

AIR LEAKAGE (LOUVER INSTALLATION POSITION, INTAKE) IS PER AMCA STANDARD 500 PROCEDURE FIG. 5.5.

AIR LEAKAGE WITH ADJUSTABLE BLADE IN CLOSED POSITION WITH A SEATING TORQUE OF 6.25 IN.LB./SQ. FT. OF LOUVER FACE AREA. LEAKAGE IS BASED ON A TEST OF A 48" x 48" LOUVER.



ARROW UNITED INDUSTRIES CERTIFIES THAT THE MODEL EA-480-D LOUVER SHOWN HEREIN IS LICENSED TO BEAR THE AMCA SEAL. THE RATINGS SHOWN ARE BASED ON TESTS AND PROCEDURES PERFORMED IN ACCORDANCE WITH AMCA PUBLICATION 511 AND COMPLY WITH THE REQUIREMENTS OF THE AMCA CERTIFIED RATINGS PROGRAM.

THE AMCA CERTIFIED RATINGS SEAL APPLIES TO AIR PERFORMANCE RATINGS AND WATER PENETRATION RATINGS.

## MS4120F, MS4620F,S; MS8120F,S; S2024-F; S20230-F Fast-Acting, Two-Position Actuators FOR FIRE/SMOKE CONTROL APPLICATIONS



The MS4120F, MS4620F,S; MS8120F,S; S2024-F, and S20230-F Fast-Acting, Two-Position Actuators are spring return direct coupled actuators (DCA) for on/off damper control. The actuator accepts an on/off signal from a single-pole, single-throw (spst) controller. Reversible mounting allows actuator to be used for either clockwise (cw) or counterclockwise (ccw) spring rotation.

Designed to operate reliably in smoke control systems requiring Underwriter's Laboratories Inc. UL555S ratings up to 350°F.

### SPECIFICATIONS

#### Models:

Model	Voltage in Vac	Internal Auxiliary Switches
MS4120F1006	120	None
MS4120F1204	120	2 SPST <sup>a</sup>
MS4620F1005	230	None
MS4620F1203	230	2 SPST <sup>a</sup>
MS8120F1002	24	None
MS8120F1200	24	2 SPST <sup>a</sup>
S2024-F (MS8120S1006)	24	None
S20230-F (MS4620S1009)	230	
S2024-F-SW2 (MS8120S1204)	24	2 SPDT <sup>a</sup>
S20230-F-SW2 (MS4620S1207)	230	

<sup>a</sup> Internal switches are designed to pass UL555S requirements (at 350°F).

#### Dimensions:

□ See Fig. 1.

#### Device Weight:

□ 7 lb (3.2 kg).

#### Stroke:

□ 95° ± 3°, mechanically limited.

#### Electrical Ratings:

□ Power Input:

- MS4120F: 120 Vac ±10%, 60 Hz.
- MS4620F,S; S20230-F: 230 Vac ±10%, 50/60 Hz.
- MS8120F,S; S2024-F: 24 Vac ±20%, -10%, 50/60 Hz (Class 2).

□ Power Consumption:

- MS4120F: Driving: 0.35A, 35W; Holding: 0.15A, 10W.
- MS4620F,S; S20230-F: Driving: 0.20A, 35W; Holding: 0.14A, 10W.
- MS8120F,S; S2024-F: Driving: 45 VA; Holding: 10 VA.

### SPECIFICATION DATA

### FEATURES

- Reversible mounting facilitates use in either clockwise (cw) or counterclockwise (ccw) spring rotation.
- No special cycling required during long-term holding.
- Integral spring return ensures level of return torque.
- Stainless steel internal spring.
- Fifteen-second spring return timing.
- No audible noise during holding.
- Patent pending design eliminates need for limit switches to reduce power consumption.
- Models available for 24, 120, and 230 Vac.
- Ninety-five degree angle of rotation.
- Actuator holds rated torque at reduced power level.
- Die-cast aluminum housing.
- Housing design allows flush mounting to damper.
- Self-centering shaft adapter (SCSA), patent pending.
- Designed to operate reliably in smoke control systems requiring Underwriter's Laboratories Inc. UL555S ratings up to 350°F.

### MS4120F, MS4620F, MS8120F

- High temperature Teflon® lead wires.
- Models available with integral high temperature (350°F) SPST position-indicating switches (7°, 85°).

### S2024-F, S20230-F, MS4620S, MS8120S

- Double-insulation rating.
- High-temperature, halogen-free, silicone-free leadwires.
- Models available with integral SPDT position-indicating switches (7°, 85°).

#### Electrical Connections:

□ Lead Wires:

- MS4120F, MS4620F, MS8120F: 1m Teflon wire.
- MS4620S, MS8120S, S2024-F, S20230-F: 1m halogen-free wire.

□ Two integral 3/8 in. flexible conduit connections.

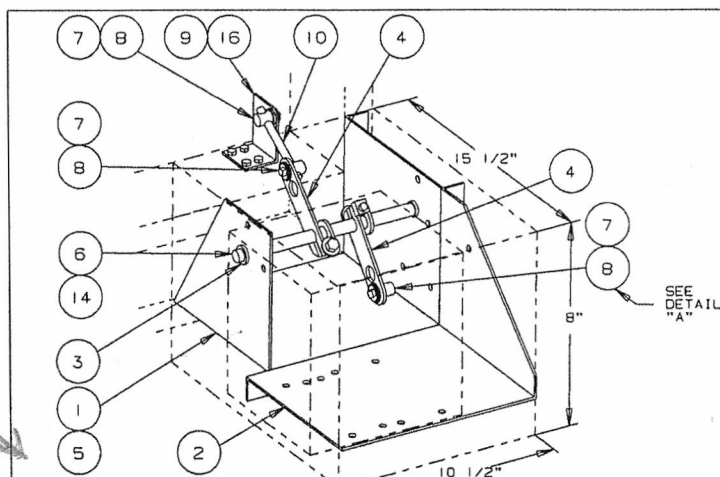
#### Timing (At Rated Torque and Voltage):

- Drive Open: 15 seconds typical.
- Spring Close: 15 seconds typical.

#### Auxiliary Switches:

- Ratings (maximum load): 250 Vac, 5A resistive, 3A inductive.
- Settings (fixed): 7° nominal stroke, 85° nominal stroke.

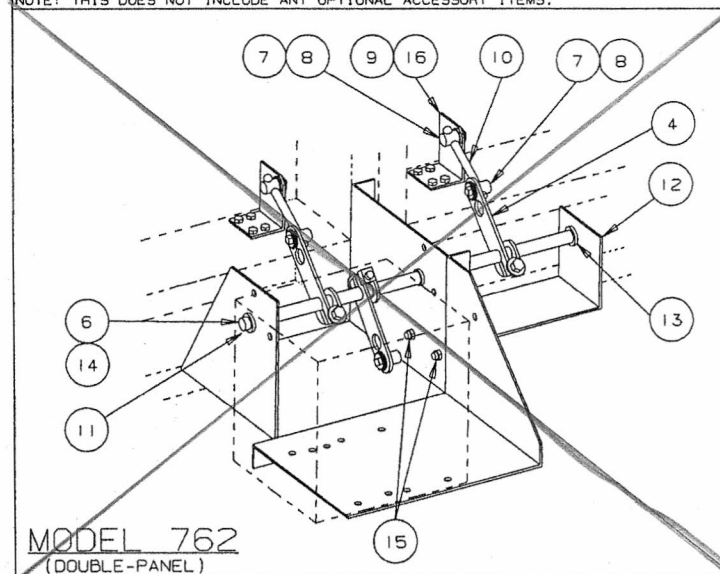




**MODEL 761**

(SINGLE-PANEL)

ENVELOPE AREA FOR STANDARD TWO POSITION SPRING RETURN ELECTRIC ACTUATOR.  
NOTE: THIS DOES NOT INCLUDE ANY OPTIONAL ACCESSORY ITEMS.

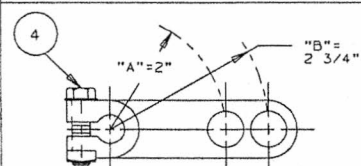


**MODEL 762**

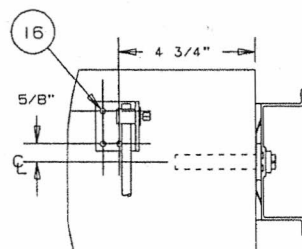
(DOUBLE-PANEL)

## UNI-MOUNT™ ELECTRIC

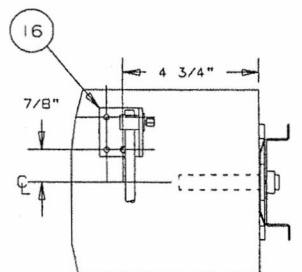
### PARTS LIST



**DETAIL "A"**  
"UNI-MOUNT" DRIVE ARM  
SEE NOTE #2



**BLADE CLIP MOUNTING  
FOR ARROW-FOIL AND  
PIN-LOCK DAMPERS**



**BLADE CLIP MOUNTING  
FOR 1770 AND 395  
DAMPERS**

ITEM	MODEL/QTY.		PART NUMBER	DESCRIPTION
	761	762		
1	1	1	40-0047	MOUNTING BRACKET
2	1	1	40-0062	MOUNTING BRACKET - ELECTRIC
3	1	-	36-0039	1/2" DIAMETER STEEL SHAFT
4	2	3	36-0199-01	DRIVE ARM ASSEMBLY
5	6	6	-----	SCREW 14-10 HEX HD. TYPE "A"
6	2	2	38-0035	SNAP RING
7	3	5	36-0215-01	PLATED STL. TRUNNION ASSEMBLY
8	3	5	34-0061	CELCON BEARING
9	1	2	38-0051-01	PLATED STEEL BLADE CLIP
10	1	2	38-0053	DRIVE ROD 5/16" DIA. ALUM., 8" LG.
11	-	1	36-0052	STEEL SHAFT, 16 1/2" LG.
12	-	1	40-0054	JACKSHAFT BRACKET
13	-	1	34-0013	NYLON BUSHING
14	2	2	34-0007-05	BRONZE BUSHING
15	-	2	-----	1/4-20x5/8" BOLT, NUT, & LK. WASHER
16	4	8	-----	BOLT, NUT & LOCK WASHER
				ARROW-FOIL: 10-24 x 1" LG
				1770/395: 10-24 x 1/2" LG

#### NOTES:

1. THE 1" LONG ROD USED TO RETAIN PIVOT-TRUNNION DURING SHIPMENT, MAY BE DISCARDED AFTER INSTALLATION.
2. OPTIMUM ROTATION AND CLOSURE WILL BE ACHIEVED BY THE ADJUSTABLE SWIVEL ON THE MOTOR DRIVE ARM #36-0199-01. THE DAMPER STOPS ARE PURPOSELY ARRANGED TO "LOCK-UP" AND REDUCE THESE STROKES BY 1/16" TO 1/8".

#### FOR NORMALLY CLOSED OPERATION

3. DAMPER MAY BE CHANGED TO NORMALLY CLOSED OPERATION, SIMPLY BY SHIFTING POSITION OF THE CRANK ARM (WHICH IS ATTACHED TO THE ACTUATOR) BY 180° AROUND SHAFT, SO THAT IT WILL ROTATE IN THE OPPOSITE (OR CCW) DIRECTION AS SHOWN.



**ARROW UNITED INDUSTRIES**  
A DIVISION OF MESTEK, INC.

314 RIVERSIDE DRIVE  
WYALUSING, PA 18853

TEL: (570) 746-1888 FAX: (570) 746-9286  
WEB ADDRESS: WWW.ARROWUNITED.COM



# ARROW

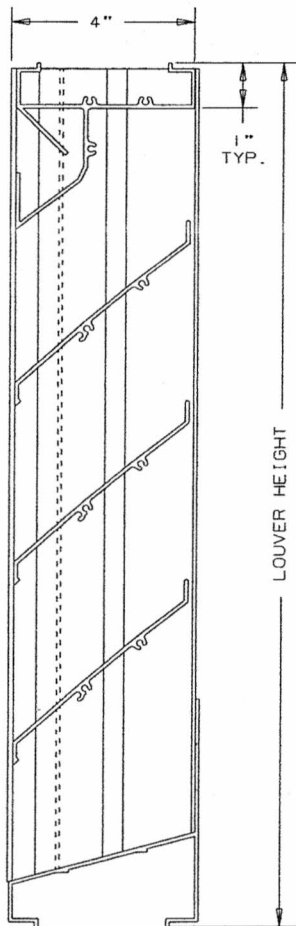
## EXTRUDED ALUMINUM LOUVERS

4" DEEP

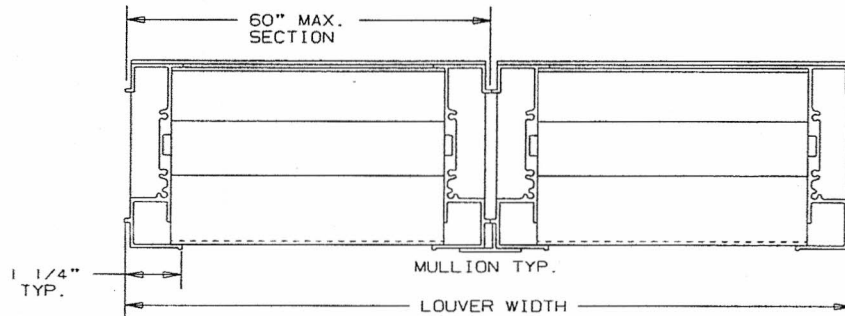
# TYPE

## EA-400

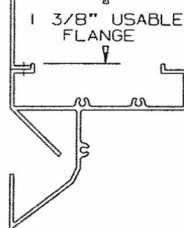
### 45° STRAIGHT BLADE-STATIONARY-CHANNEL TYPE



NOT TO SCALE



FLANGE FRAME  
(AVAILABLE  
EITHER FACE)



FLANGE FRAME  
OPTION

#### SPECIFICATIONS

MATERIAL: EXTRUDED ALUMINUM 6063-T6/T52 ALLOY  
AVAILABLE IN .081" THK. AND  
.125" THK. (NOMINAL).

FACE OF LOUVER: FULL WIDTH SILL WITH HEAD AND  
BLADES CONTAINED WITHIN JAMBS.  
APPROXIMATE BLADE CENTERS 4"

SCREEN: (WHEN INDICATED, IN A REMOVABLE FRAME)  
- BIRD SCREEN - 1/2" FLATTENED ALUMINUM .051" THK.

OR - 1/2" SO. MESH INTERMEDIATE DOUBLE-  
CRIMPED ALUMINUM WIRE .063" DIA.  
OR - 18/16 MESH .011" DIA. ALUMINUM  
WIRE INSECT SCREEN.

FINISH: BAKED ENAMEL

MINIMUM PANEL SIZE: 12" x 12"

MAXIMUM SINGLE PANEL SIZE: 60" x 96"

#### LOUVER PERFORMANCE STATEMENT

LOUVER MODEL EA-400 SHALL BE FABRICATED TO PROVIDE  
A MINIMUM OF (57%), 9.09 SQUARE FEET OF FREE AREA FOR  
A 48" x 48" SIZE LOUVER AND BEAR THE AMCA CERTIFIED  
RATINGS PROGRAM SEAL FOR AIR PERFORMANCE AND WATER  
PENETRATION. THE RATING SHALL SHOW A BEGINNING  
POINT OF WATER PENETRATION AT .01 OUNCES PER SQUARE  
FOOT OF FREE AREA AT A FREE AREA VELOCITY OF 886  
FEET PER MINUTE. (8054) CUBIC FEET PER MINUTE. WITH  
.125 INCHES WATER GAUGE PRESSURE DROP FOR AIR INTAKE.

FOR CERTIFIED RATINGS  
AUTHORIZED BY AMCA  
-SEE REVERSE SIDE

NOMINAL DEDUCTIONS WILL BE MADE TO THE OPENING SIZE GIVEN.

	2	12	18				B	I	
ITEM	QTY.	WIDTH	HEIGHT	WIDTH	HEIGHT	MULL	TYPE	LOC	
		OPENING SIZE		LOUVER SIZE			SCREENS		



UNION MADE



ARROW UNITED INDUSTRIES  
A DIVISION OF MESTEK, INC.

314 RIVERSIDE DRIVE  
WYALUSING, PA 18853

TEL: (570) 746-1888 FAX: (570) 746-9286

AGENT: \_\_\_\_\_

ARCH./ENG.:

CONTR.:

PROJECT:

EDR: ECN: JOB:

DATE: DWN.: DWG.:

860-B-OCTOBER-2003-1

# LOUVER MODEL EA-400

## 45° BAFFLE BLADE

### EXTRUDED ALUMINUM - STATIONARY

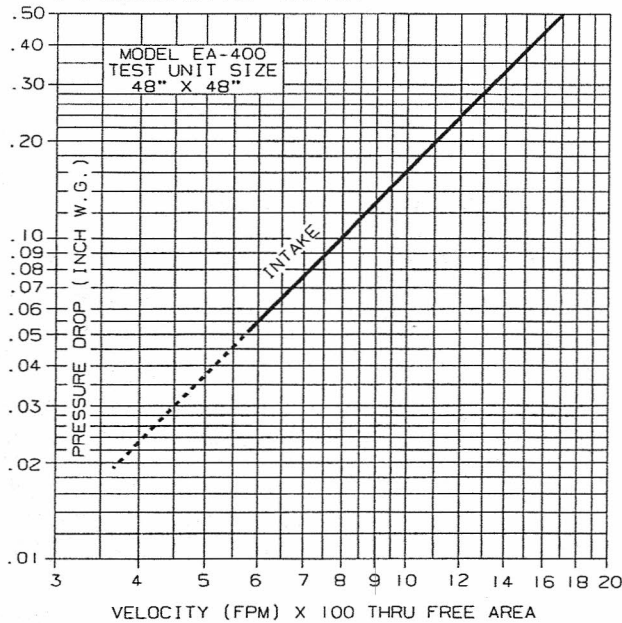
## PERFORMANCE DATA

EXCELLENT WEATHER PROTECTION WITH LITTLE PRESSURE LOSS.

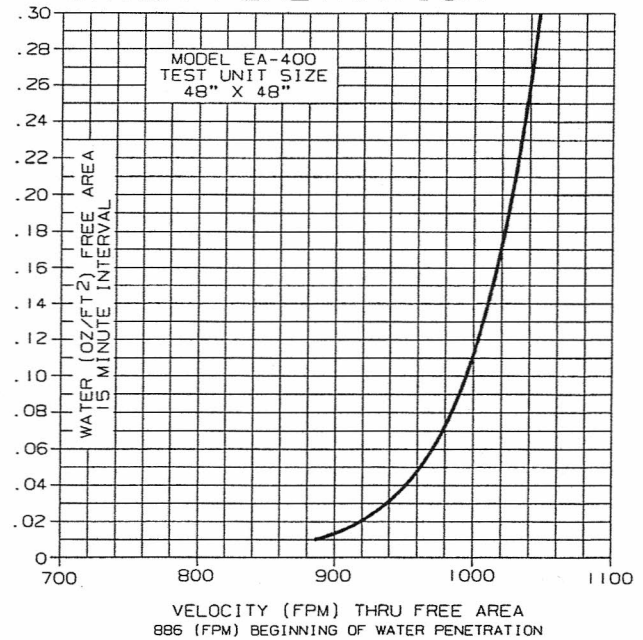
TESTS OF A 48" X 48" SAMPLE ACCORDING TO AMCA STANDARD 500-L SHOWS LOW WATER PENETRATION. TESTS SHOW LESS THAN .02 OZ. PER SQ. FT. WATER PENETRATION AT 920 FPM (FREE AREA VELOCITY) WITH LESS THAN .14" W.G. PRESSURE DROP (INTAKE).

RATINGS DO NOT INCLUDE THE EFFECT OF BIRDSCREEN.

### PRESSURE DROP



### WATER PENETRATION



### FREE AREA

HEIGHT	FREE AREA (SQ. FT.)								
	WIDTH								
	12"	18"	24"	30"	36"	42"	48"	54"	60"
12"	.31	.50	.70	.89	1.09	1.28	1.48	1.67	1.87
24"	.82	1.34	1.86	2.38	2.90	3.42	3.94	4.46	4.98
36"	1.34	2.18	3.03	3.87	4.71	5.56	6.40	7.25	8.09
48"	1.85	3.02	4.19	5.36	6.53	7.70	8.87	10.04	11.20
60"	2.37	3.86	5.35	6.85	8.34	9.84	11.33	12.82	14.32
72"	2.88	4.70	6.52	8.34	10.16	11.97	13.79	15.61	17.43
84"	3.39	5.54	7.68	9.83	11.97	14.11	16.25	18.40	20.54
96"	3.91	6.38	8.85	11.31	13.78	16.25	18.72	21.19	23.66



ARROW UNITED CERTIFIES THAT THE MODEL EA-400 SHOWN HEREIN IS LICENSED TO BEAR THE AMCA SEAL. THE RATINGS SHOWN ARE BASED ON TESTS AND PROCEDURES PERFORMED IN ACCORDANCE WITH THE AMCA PUBLICATION 511 AND COMPLY WITH THE REQUIREMENTS OF THE AMCA CERTIFIED RATINGS PROGRAM. THE AMCA CERTIFIED RATINGS SEAL APPLIES TO AIR PERFORMANCE RATINGS AND WATER PENETRATION RATINGS.